

IN THE CLAIMS:

1. (Currently Amended) A process for the laser beam machining of components, the process comprising:

providing a remote laser head;

guiding the laser head with a manipulator with a multiaxial manipulator hand, said remote laser head being arranged externally on said manipulator hand, said laser head emitting a laser beam;

during welding or cutting, guiding the emitted laser beam along a welding or cutting path on the component by orientation modifications and with a variable irradiation angle β ,

~~where the changes in the guiding including changing the orientation of the laser beam are generated~~ only by pivoting motions of the manipulator hand about at least one of the hand axes; ~~wherein~~ resulting in a changing of irradiation angle of the laser beam; and

changing and adjusting at least one or more of a laser power output of the emitted laser beam and a velocity of welding or cutting ~~is adjusted~~ as a function of the changing irradiation angle β of the laser beam.

2. (Previously Presented) A process in accordance with claim 1, wherein the laser beam emitted to the component is not aligned with a last hand axis.

3. (Previously Presented) A process in accordance with claim 2, wherein the

manipulator is at rest during machining, welding or cutting with three other axes.

4. (Previously Presented) A process in accordance with claim 1, wherein the focus of the laser beam is moved during welding or cutting on a shell path about an intersection of several of the hand axes.

5. (Previously Presented) A process in accordance with claim 1, wherein the focus of the laser beam is adjusted in the direction of the beam during welding or cutting.

6. (Canceled)

7. (Currently Amended) A process in accordance with claim ~~[[6]]~~ claim 1, wherein the remote laser head is guided by means of an extension arm at a spaced location from the manipulator hand.

8. (Previously Presented) A process in accordance with claim 2, wherein the remote laser head is held with an orientation in which the emitted laser beam is directed at right angles to the last hand axis.

9. (Previously Presented) A process in accordance with claim 1, wherein the remote laser head is attached directly to the manipulator hand such that the emitted laser beam

intersects the intersection of the several of the hand axes.

10. (Previously Presented) A process in accordance with claim 1, wherein a remote laser head with a fixed-angle focusing optical system is used.

11. (Previously Presented) A process in accordance with claim 1, wherein said remote laser head has a fixed focal length of preferably 500 mm to 1,500 mm.

12 - 13. (Canceled)

14. (Previously Presented) A process in accordance with claim 1, wherein a remote laser head with an optical system adjustable in the manner of a zoom lens is used.

15. (Previously Presented) A process for the laser beam welding of vehicle body parts, the process comprising:

providing a manipulator with robot basic axes and a manipulator hand having hand axes;

providing a laser source;

providing a remote laser head, said remote laser head being connected to said manipulator hand such that said remote laser head is located at a spaced location from said manipulator hand;

providing a fiber optic cable;

10 connecting said laser source to said remote laser head via said fiber optic cable;

guiding the laser head with the manipulator hand;

during welding guiding the motion of the hand to move the laser beam along a welding path on the vehicle body part by orientation modifications and with a variable irradiation angle β , wherein the changes in the orientation of the laser beam are generated only by pivoting motions of the manipulator hand about at least one of the hand axes;

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changing at least one of laser power and velocity of welding as function of said variable irradiation angle β .

16. (Previously Presented) A process in accordance with claim 15, wherein the laser beam emitted to the part is not aligned with a last hand axis of the hand axes.

17. (Previously Presented) A process in accordance with claim 16, wherein the manipulator is at rest during welding with there being no movement about the robot basic axes during welding.

18. (Previously Presented) A process in accordance with claim 15, wherein the focus of the laser beam is moved during welding on a shell path about an intersection of several of the hand axes.

19. (Previously Presented) A process in accordance with claim 15, wherein the focus of the laser beam is adjusted in the direction of the beam during welding.

20. (Currently Amended) A process in accordance with claim ~~[[14]]~~ 15, further comprising guiding the remote laser head using an extension arm at a spaced location from the manipulator hand.

21. (Currently Amended) A device for the laser beam welding of vehicle body parts, the device comprising:

a manipulator with robot basic axes and a manipulator hand having hand axes;

a remote laser head arranged externally to said manipulator hand, said remote laser head emitting a laser beam;

a control means for pivoting said manipulator hand about at least one of said hand axes such that the laser beam is guided along a welding path on the vehicle body with a variable irradiation angle β ;

a laser beam source arranged in a position external to said manipulator; and

a fiber optic cable, said laser head being connected to said laser beam source via said fiber optic cable.

22. (Previously Presented) A device in accordance with claim 21, wherein one or more of laser power and a velocity of welding is adjusted as a function of the irradiation angle β of

the laser beam via said control means.

23. (Canceled)

24. (Previously Presented) A device in accordance with claim 21, wherein said remote laser head has a fixed focal length of 500 mm to 1,500 mm.